

White Paper

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Blount County Archival Preservation Grant

Project Director: Jackie Glenn

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Project Description: The installation of new climate control and lighting in a renovated facility designed to preserve archival records, dating from the late 1700s to the present, pertaining to the history and culture of eastern Tennessee.

Project Overview

Blount County Records Management and Archives Department (hereafter referred to as the Archives) has requested and received funds to help with a project that involved relocation of the records collection. This project has helped us to implement sustainable strategies for preserving the historic records of Blount County Archives by relocation to a larger more suitable space at the Blount County Operations Center. The building has all the recommended potential components and infrastructure necessary to create and support an excellent environment for the archives and preserve Blount County's irreplaceable documentary heritage. The ability to preserve, study, and use these documents will ensure the preservation of this critical part of Appalachian culture for future generations. This project is not only important to the Archives but also important to preserving the history of the Southeast region of the country. It will help us implement a long term conservation plan for our unique cultural collection of records that range over two hundred and fifteen years.

Two of the most challenging problems for managing archival collections are having enough delegated space and for that space to be environmentally conducive to records storage. The Archives took advantage of a fantastic opportunity to move its record collections from three existing locations to the new location at the Blount County Operations Center where their entire collection will be housed under one roof. When most of the renovations were complete we received another two thousand boxes of court records. Blount County has established a program called Blount Energy Efficiency and Greening (BEE-Green) Program that has been able to reduce energy consumption and green house gas emissions through building retrofits and community education. The county started with the Justice Center and the Courthouse buildings and have done energy audits and retrofitted the HVAC systems in both buildings. Some renovations at the Operations Center involved upgrading and installing high efficiency HVAC systems for some county office space. Our strategy is to extend this program by installing an energy efficient HVAC and lighting system in the Archive's location at the Operations Center. Blount County's BEE-Green program includes a recycling program and implementing selected LEED, Energy Star and Star Community principles. Our advisory team felt like it was more cost effective to invest in a building which can support our existing humanities collection and ensure continued access to those collections by implementing preventative conservation measures.

Advantages of the New Location

The Operations Center (formerly the Ceramaspeed plant building) is 91,323 square feet, with an attached 48,000 square foot garage with loading docks and a drive up ramp. The loading dock area is accessible to the 10,000 square feet that was designated to the archives. The Operations Center is located in the City of Alcoa, a more populated area, and is more convenient and accessible to the public since other county offices are located there. Parking is more than adequate for the public and for the staff with 640 spaces convenient to two possible entrance locations. Entrances are ADA accessible. The County has renovated office space and already moved the Highway Department, the School Maintenance Department, the Environmental, Planning and Codes Departments into the Operations Center building. The building enclosure completely surrounds the sensitive storage areas consisting of the bulk stack, storage, processing, and research areas. This will not only temper the new internal repository, it will require less energy from the new systems. The architect anticipates at least 20% in energy savings. The new facility will provide added security because it has a fire alarm, sprinkler system, security lighting and is surrounded by a chain link fence. A fire hydrant is located on the property. The building is currently up to City of Alcoa fire codes and in close proximity to a fire station. The Operation Centers industrial concrete

slab floor will support 300 pounds per foot and thus accommodate an intensive high stacked storage system load. Most structural systems including existing walls are noncombustible. The ceilings in the Operations Center are twelve feet tall which will hold taller shelving. Future expansion is available directly adjacent to the designated records area. The electrical system has 480 volts and 3 phase power with ample current to remain. On- site maintenance personnel are available for immediate and ongoing service and disaster response. The Operations Center will utilize a stable fiber optic connection to the servers which house the records inventory in Laserfiche. At our current location we have frequent connection problems.

Disadvantages of our Former Location

The County records and particularly the historic archives were threatened. Our former collection conditions were no longer acceptable to receive records or process and store archives due to a number of issues:

SPACE CONDITIONS

Lack of Environmental Controls

The most critical and immediate threat to the entire collection was the lack of environmental controls. The main storage space only had window air conditioners providing both cool air and heat. These units are impossible to control within recommended temperature and humidity requirements. They have only limited manual adjustments. Reliability of the units was very poor with frequent breakdowns resulting in high temperature and humidity swings.

The off- site storage had even less control over historic documents with no heating, air conditioning or humidity control along with very poor lighting. There was no document processing space. Other maintenance staff had access because the records area also housed the boiler room.

All records and archives should have increased storage life due to relocation to better conditions.

Lack of Public Access

The public is demanding more access to records due to the explosion in local research in history and ancestry. The new location is convenient and easily accessible to the public and located at ground level so there are no stairs to climb. The former building was non compliant with the ADA accessibility standards.

Operational Inefficiency

Multiple locations presented extreme inefficiencies in time for the staff to travel to the remote location.

Also the time required to serve and process an outside request was lengthened due to the additional coordination required.

Inappropriate Neighbors

An incompatible adjacent tenant stored and prepared food for a County food program. This attracted and promoted pests and rodents harmful to the collections. Inadequate fire safety measures further endangered the collections. A high water use introduced unwanted moisture and raises the humidity levels. Another tenant had their computer and phone data center located in the records area, so they had access to the records storage area.

Site and Building Shell Deficiencies

At the former location, storm water drained into the foundation of the building raising the humidity level significantly in the interior storage areas. The building shell was concrete block and was built in 1955 with little or no insulation. With the multiple exterior door and window locations, a high level of air infiltration was a constant problem. Additionally, the large number of openings posed a significant security risk. Exit doors did not have proper egress and locking mechanisms. Hazardous materials including asbestos floor tiles remain in the building. Built as an elementary school, the floor loads were entirely unsuitable for concentrated stack loads. No back up emergency power was available.

The Blount County Archives houses a regionally significant cultural heritage collection. All records and archives have significantly reduced storage life due to these conditions.

Lack of Space

The current space was completely filled forcing the department to place a moratorium on transfers of additional records and archives to the Center. The department had already expanded into vacated offices

and an unsuitable remote site with no environmental controls. Lack of space was significantly impacting the day to day essential operations. There was only one office for two full time and volunteer staff. Essential space for vital processing functions and holding areas did not exist. As a result, documents could not be properly cataloged, boxed, copied and indexed.

Lack of Security

Lack of space created other problem situations. A significant lack of security had developed due to multiple access points to materials because they were stored in multiple locations. Expansion into remote areas means that there was no supervision present at the off- site storage areas. The use of vacated offices along public halls dramatically lessened the security of the records.

Organizational Profile and Patrons

Blount County designated as a "Preserve America" site, was formed in 1795 before Tennessee became the sixteenth state. The County is home to McGhee Tyson Airbase and Knoxville Airport. Landscape and location to the beautiful Great Smoky Mountains make it one of the most desirable places to live. Our population of 120,000 has grown by leaps and bounds in the past few years. The mission of the Archives is to provide access to and preserve county records that are of historical, legal and evidential value. We provide local government source material to court officials, genealogists, the legal profession, historians and the general public for as long as materials are needed. The Archives also provides information to the public on demography, genealogy and history of Blount County, Tennessee and early American settlement from late 1700s to the present. The Archives serves as a resource for teachers and scholars on early Tennessee and American history. The Archives usually has around twelve hundred inquiries by email and telephone requests and several hundred requests by mail and walk- in customers per year. Our holdings include approximately six thousand linear feet of records and approximately two thousand docket and minute books. Court offices are waiting to send another eight hundred boxes and more minute books. Approximately eighty percent of the documents that were stored at the Hubbard location are of permanent value. We receive several hundred interoffice requests per year. The Blount County Archives budget for the 2013-14 Fiscal Year was \$115,416.00. We have two full time positions, County Archivist/Records Manager and Records Clerk. The archives takes advantage of the ETHRA work/training program and have one trainee that works 20 hours per week. This year we have two interns from Maryville College that work a few hours per week. The Department's hours are 8:00 am to 4:30 pm, Monday through Friday, by appointment.

Advisory Team

We put together an integrated team that included the Tennessee Assistant State Archivist who has been instrumental in the development of Tennessee's archival program and former State Museum Curator of History and Extension Services who currently works with the state Archives Development Program. Both have extensive experience with strategic planning, program implementation, preservation and collections care management. They provide years of experience in working with archival and historic collections. The architect and engineer were selected for their work with designing special environments and libraries. Our goal is to provide the environment required for long-term preservation of our collection materials at the least cost of energy.

Dr. Wayne C. Moore has served as the Assistant State Archivist with primary responsibility for Tennessee's permanent record and the Archives Development Program, since 2001. Mr. Moore works with a wide range of local officials and organizations to improve the preservation and accessibility of historical records and encourage the establishment of county archives throughout Tennessee. Some of his responsibilities include administering a \$50,000 annual grants program for local government records keepers and overseeing the archival side of the State Library and Archives. As chairman of the Tennessee

Historical Records Advisory Board (THRAB), he coordinates statewide efforts on behalf of historical records and serves as liaison with the grant-making commission of the National Archives. Dr. Moore has served from 2008 to 2010 on the Board of Directors for the national Council of State Archivists (CoSA), and is currently on the Board of Directors for the National Association of Government Archivists and 10 Records Administrators (NAGARA). Dr. Moore has been involved with the Advisory Team for over two years.

Myers E. Brown, Archivist III, with the Tennessee State Library and Archives Development Program joined our advisory team. Mr. Brown was formerly the Curator of History and Extension Services with the Tennessee State Museum where he provided curatorial, registration, programming and exhibition assistance to museums, and historic sites across Tennessee. Mr. Brown worked with program implementation and collections management and developed training programs and workshops for museums across the state.

Dan Brewer, AIA LEED AP, BC & D the principal architect with Brewer, Ingram, Fuller Architects, Inc. will coordinate the design and technical engineering consultants and be responsible for incorporating the recommendations by the archival consultant. The firm is a preservation and restoration firm with substantial experience in design for special environments. Their projects include planning and design for libraries, data centers, and educational facilities. Dan led the design team with appropriate systems engineers accomplished in critical mechanical, electrical and life safety systems. Dan and the engineers also brought energy efficient design expertise to the project's lighting and HVAC solutions. Mr. Brewer works with Albert F.G. Bedinger Consulting Engineers for Mechanical Engineering and Vreeland Engineers for Electrical Engineering. Albert F. G. Bedinger Consulting Engineers have designed many HVAC systems and worked with many libraries including the University of Tennessee Law Library and Maryville College Library.

Denny Garner, Blount County's Maintenance Director, participated in the project. Mr. Garner provided both hands-on and advisory expertise in the technical fields of Heating, Ventilation, and Air Conditioning (HVAC), Trane (HVAC) digital control systems, electrical, fire alarms, plumbing and structural. He is skilled in the use and integration of personal computers with the HVAC control systems and office environments. The Maintenance Director developed and maintains an energy conservation program that tracks and monitors utility costs. Mr. Garner maintains a twenty-four hour, seven days a week, Emergency Standby schedule, ensuring a maintenance technician is always available to respond to maintenance emergencies within all county facilities.

Blount County Mayor Ed Mitchell, former Fire Chief for the City of Maryville helped provide advice on emergency planning, sprinkler system and fire safety issues. Blount County Commissioner Gary Farmer, supervisor of Blount County School maintenance, former teacher of Building Trades at Heritage High School has agreed to serve on the advisory team. Jeff Hatcher, of the Blount County Highway Department, will be part of the team that will support the Archives project. Commissioner Farmer's and Jeff Hatcher's offices are located in the Operations Center and are familiar with the Operations building and assisted in other office renovations.

Jackie Glenn, Blount County Archivist, served as project director and scheduled the Architect and Engineer and assumed the responsibility for the reporting and documentation of the Sustaining Cultural Heritage Collections Implementation Grant. Mrs. Glenn has the position of department head of the Archives Department and has been instrumental in creating the Archives Department. Mrs. Glenn has certification as an Archives Manager from Tennessee State Library and Archives and the University of Tennessee. She was appointed to the Tennessee Historical Records Advisory Board (THRAB) in 2006 and reappointed in 2010. THRAB serves as a National Historical Publications and Records Commission

grant review board and has administered a State and National Archival Partnership grant program for the last several years.

Renovation Project

We were so excited about receiving a National Endowment for the Humanities “Sustaining Cultural Heritage Collections” grant that we requested to start the project a month early and started the renovation project in September of 2014 with approval from National Endowment for the Humanities. We began by moving the old furniture and equipment out of the records storage area. Some office furniture and equipment was put up for auction on www.govdeals.org. Our Maintenance Director retired so the new Maintenance Director, Denny Garner was assigned to assist us with the renovation project. We notified National Endowment of the change in personnel.



Records storage area before renovation

We used in-house labor to accomplish the job and the project was supervised by the Maintenance Director. Next we had a series of meetings with management and co-workers to work out the details and employees that would be assigned to the project. The advisory team also met with the Architect, Electrician and the Purchasing Director to go over the project and discuss any changes that had to be made to the renovation project since December of 2013. The original plan was for the Records and Archives Offices to be located at the side of the Operations Center building. After the grant application was made we began to have some plumbing issues which resulted in closing some restrooms on that side of the building. The advisory team decided to move the location of the Records and Archives Office closer to the front of the building. The Records and Archives Offices will be located directly across from the front lobby and front entrance of the building. The new location will provide greater security for viewing records because patrons would first go through the Planning Department receptionist whose office overlooks the main lobby area. This placed our new offices close to the existing public restrooms located in the front hallway. The Project Director notified the National Endowment for the Humanities office of the pending change obtaining approval of the new layout. This change resulted in minor changes in the records storage area. We relocated the receiving room to be immediately outside the records storage area and added an additional three hundred and eighty-eight square feet which can be used for a holding area while records are being processed.



Space after it was cleaned out before office area was built

The next few months the Records and Archives staff was busy updating our inventory of records and shelving in preparation for moving the department. We measured and counted shelves and looked over adjusted floor plan to see how units and bookcases would fit into the new records storage area. We met with the advisory team and Blount County Public Records Commission. Blount County Commissioner and Blount County Public Records Commission member, Ron French, met with us at the Operations Center to look over the new proposed records storage location. In December 2014, Maintenance Director Denny Garner orchestrated the demolition of the old plant equipment that was hanging overhead, attached to the walls and flooring. Mr. Garner and a crew of several in-house workers removed the overhead ductwork and a large overhead HVAC unit that was left by previous plant owners. The work crew cleaned up the area and painted the existing walls which surround the records storage area.



A view of book cases before more documents were moved in



Archives Office and Lobby area



Mobile shelving in record storage area after renovation

In reviewing the lighting plan layout and costs, we discovered that we would be able to improve lighting by using the existing lighting fixtures and replacing the bulbs with new LED energy efficient bulbs. The County's electrician and maintenance staff adjusted the fixtures and installed new LED bulbs. Emergency lighting was installed in the records storage areas. The original plan was to install motion detectors so the lighting would cut off when no one was in the records storage area. We were advised by the Maintenance Director that this would not work because the shelving would block the line of site for the sensor to work. It would take a motion detector with each row of shelving and it would be better to turn the lights on and off as needed. The changes resulted in costs savings and improved the lighting which will be more conducive for records storage. Blount County promotes energy efficiency by having a BEE-Green program and reusing equipment and materials whenever possible.



Records storage area and DuctSox ductwork (to the upper right)

Next Highway Department employees cleared the mechanical room of the old equipment to make room for the new HVAC equipment that would be housed in that room. After an in house audit of our energy costs we decided that it would be more cost effective and efficient to go with a gas heating unit and use electric air conditioning equipment. We discussed the change with the Architect and Engineer and decided that we could still maintain a stable environment and the recommended temperature and humidity levels for the collection. National Endowment for the Humanities was notified of the change and we proceeded to prepare the bid. We received an estimate from The Cooperative Purchasing Network with Trane for a large split system that the strict temperature and humidity controls required. The Cooperative Purchasing Network's estimate came in at five times the amount that we had budgeted for the HVAC system. We discussed any changes that could be made to the large split HVAC system plan to help with the cost. The Architect and Engineer had recommended that we tear the old existing ductwork down because it was dirty and could contain mold. Installing new ductwork and the CDQ wheel that helps with dehumidification run the cost of the system up. The Engineer and representatives from Trane said that we could go with rooftop HVAC units to help save money. The engineer used environmental reports that were taken in the records storage area to help him plan more cost effective systems that could be placed on the roof. These smaller HVAC units were placed on the roof areas adjacent to the records storage area

to avoid future leaking problems. The new design called for two smaller HVAC units that are placed in roof curbs and installed on each end of the records storage area. One unit was placed over a hallway and the other unit was placed over the equipment room. A third unit that supplies the receiving room is located on the roof over the maintenance shop area. We ended up putting the HVAC system over the roof in the receiving room to help fill a hole in the roof where the old unit was taken out. This will place the HVAC units closer to the ductwork, helping to defer the cost. The Engineer suggested using Sedona made by DuctSox for ductwork. DuctSox makes a fabric material ductwork that is perforated throughout the system allowing a more even distribution of air flow. Because the entire DuctSox System is a diffuser, air can be supplied to the occupied space in a more efficient pattern. There is also considerable savings in the labor time required to install DuctSox versus a comparable metal system. The DuctSox systems make a lighter roof load. The duct system seems to run quietly and without the resonating properties found in metal. Additionally, DuctSox fabrics provide noise absorption benefits in the occupied space. Since the DuctSox system is air porous the air passing through the fabric may eliminate the risk of condensation and deflect airborne dust from accumulating on DuctSox surfaces. The Sedona DuctSox that we used features an active antimicrobial agent that inhibits bacteria growth. These HVAC systems should provide recommended temperature and humidity levels conducive for paper storage for 85-90 percent of the year.

Blount County Purchasing Department sent out Blount County bid #2015-2365 for the HVAC unit and opened the bids on September 4, 2015. There was a little bit of delay in awarding the bid. Premier Services Group, Inc., the lowest bidder did not work out because they could not get bonded. We awarded the bid to the next highest bidder, Roger Newman Co., Inc. on October 12, 2015. Roger Newman Co., Inc. ordered the equipment and duct work. They set the roof curbs that hold the HVAC equipment. The duct work was delivered and installed by Roger Newman Co., Inc. On January 4, 2016 the HVAC equipment was installed and fully operational.

We used in-house labor to build the Archive offices and reading room. Sheetrock was finished by a contractor. The concrete floor in offices and reading room was stained and polished making office floors more durable and sustainable. The Archive offices and reading room has a dedicated HVAC system that was paid for by Blount County Maintenance. By having separate units we will be able to maintain the recommended temperature and humidity levels required for records storage.

The receiving room was built after we had moved our offices and collections into the newly renovated area. The receiving room walls go all the way to ceiling in order to make it more energy efficient. Two double doors were installed to make loading and unloading records more convenient. The receiving room is accessible by driving through the Highway Department garage area or we can use adjacent double doors in the plant area for loading and unloading. This room has a separate HVAC system and all HVAC systems are connected to the Trane Tracer Summit Energy system. This computerized system is currently being used in the Operations Center and has proved to be highly efficient.

Evaluation

A lot of planning goes into this type of project. I would make sure to get several estimates as the project progresses. In our case, the third grant application was successful in getting funding. I would estimate a little higher than what you think that you will need because there is unexpected expenses that come up when you are renovating an older building.

Long Term

The National Endowment for the Humanities Grant has enabled us to sustain our precious cultural heritage collection of records for many years to come. Without the funding we wouldn't have been able to provide the environment conducive for storing our collection that dates back as far as 1795.

